170071

NEWARK PUBLIC LIBRARY

JUL 21 1981

U. S. GOVT. PUBS.
DEPOSITORY 976

FLOOD INSURANCE STUDY

VILLAGE OF BURR RIDGE, ILLINOIS

DU PAGE AND COOK COUNTIES

APRIL 15, 1981

federal emergency management agency
federal insurance administration

COMMUNITY NUMBER - 170071

FEM 1. 209:

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
1.1	Purpose of Study	1
1.2	Authority and Acknowledgements	1
1.3	Coordination	1
2.0	AREA STUDIED	2
2.1	Scope of Study	2
2.2	Community Description	2
2.3	Principal Flood Problems	5
2.4	Flood Protection Measures	6
3.0	ENGINEERING METHODS	6
3.1	Hydrologic Analyses	7
3.2	Hydraulic Analyses	9
4.0	FLOOD PLAIN MANAGEMENT APPLICATIONS	10
4.1	Flood Boundaries	10
4.2	Floodways	11
5.0	INSURANCE APPLICATION	12
5.1	Reach Determinations	16
5.2	Flood Hazard Factors	16
5.3	Flood Insurance Zones	16
5.4	Flood Insurance Rate Map Description	17

TABLE OF CONTENTS (Continued)

		Page
6.0	OTHER STUDIES	17
7.0	LOCATION OF DATA	20
8.0	REFERENCES AND BIBLIOGRAPHY	20

FIGURES

Figure 1 - Vicinity Map		3
Figure 2 - Floodway Schematic		12

TABLES

Table 1 - Summary of Discharges		8
Table 2 - Floodway Data		13
Table 3 - Flood Insurance Zone Data		18

EXHIBITS

Exhibit 1 - Flood Profiles

63rd Street Ditch	Panels	01P - 02P
79th Street Ditch	Panel	03P
Plainfield Road Ditch	Panels	04P - 05P
Flagg Creek	Panel	06P
Tributary A	Panel	07P
Tributary B	Panels	08P - 09P
Tributary C	Panel	10P

Exhibit 2 - Flood Boundary and Floodway Map Index
Flood Boundary and Floodway Map

PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index
Flood Insurance Rate Map

FLOOD INSURANCE STUDY

VILLAGE OF BURR RIDGE, COOK AND DU PAGE COUNTIES, ILLINOIS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the Village of Burr Ridge, Cook and Du Page Counties, Illinois, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study will be used to convert the Village of Burr Ridge to the regular program of flood insurance by the Federal Insurance Administration (FIA). Local and regional planners will use this study in their efforts to promote sound flood plain management.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these Federally-supported studies are based. These criteria take precedence over the minimum Federal criteria for purposes of regulating development in the flood plain, as set forth in the Code of Federal Regulations at 44 CFR, 60.1 (d). In such cases, however, it shall be understood that the state (or other jurisdictional agency) shall be able to explain these requirements and criteria.

1.2 Authority and Acknowledgements

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by Harza Engineering Company for the Federal Insurance Administration, under Contract No. H-3978. This study was completed in August 1978.

1.3 Coordination

Streams requiring detailed study were identified in meetings attended by Harza Engineering Company, the FIA, village officials of Burr Ridge, and the village's engineering consultant, Lindley and Sons, Inc. in March 1976. Hydrologic and hydraulic analyses were coordinated with the Illinois Department of Transportation, Division of Water Resources (DWR), the Illinois State Water Survey (SWS), and the U.S. Department of Agriculture, Soil Conservation Service (SCS). During the course of the work by Harza, flood elevations, flood boundaries, and floodway delineations were reviewed with community officials, the FIA, and the DWR.

On May 4, 1979, the results of the work by the Study Contractor were reviewed and accepted at a final coordination meeting attended by representatives of the Study Contractor, the FIA, and the community.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Village of Burr Ridge, Cook and Du Page Counties, Illinois. The area of study is shown on the Vicinity Map (Figure 1).

The areas studied by detailed methods were selected with priority given to all known flood hazard areas, and areas of projected development or proposed construction through December 1979.

Approximate methods of analysis were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to and agreed upon by the FIA and the Village of Burr Ridge.

The flooding sources studied by detailed methods are listed below:

a. 63rd Street Ditch within the corporate limits;

b. 79th Street Ditch from the downstream corporate limit to 975 feet upstream of Hamilton Street;

c. Plainfield Road Ditch from the downstream corporate limit to 4,000 feet upstream of the International Harvester entrance;

d. Flagg Creek within the corporate limits;

e. Tributary A within the corporate limits;

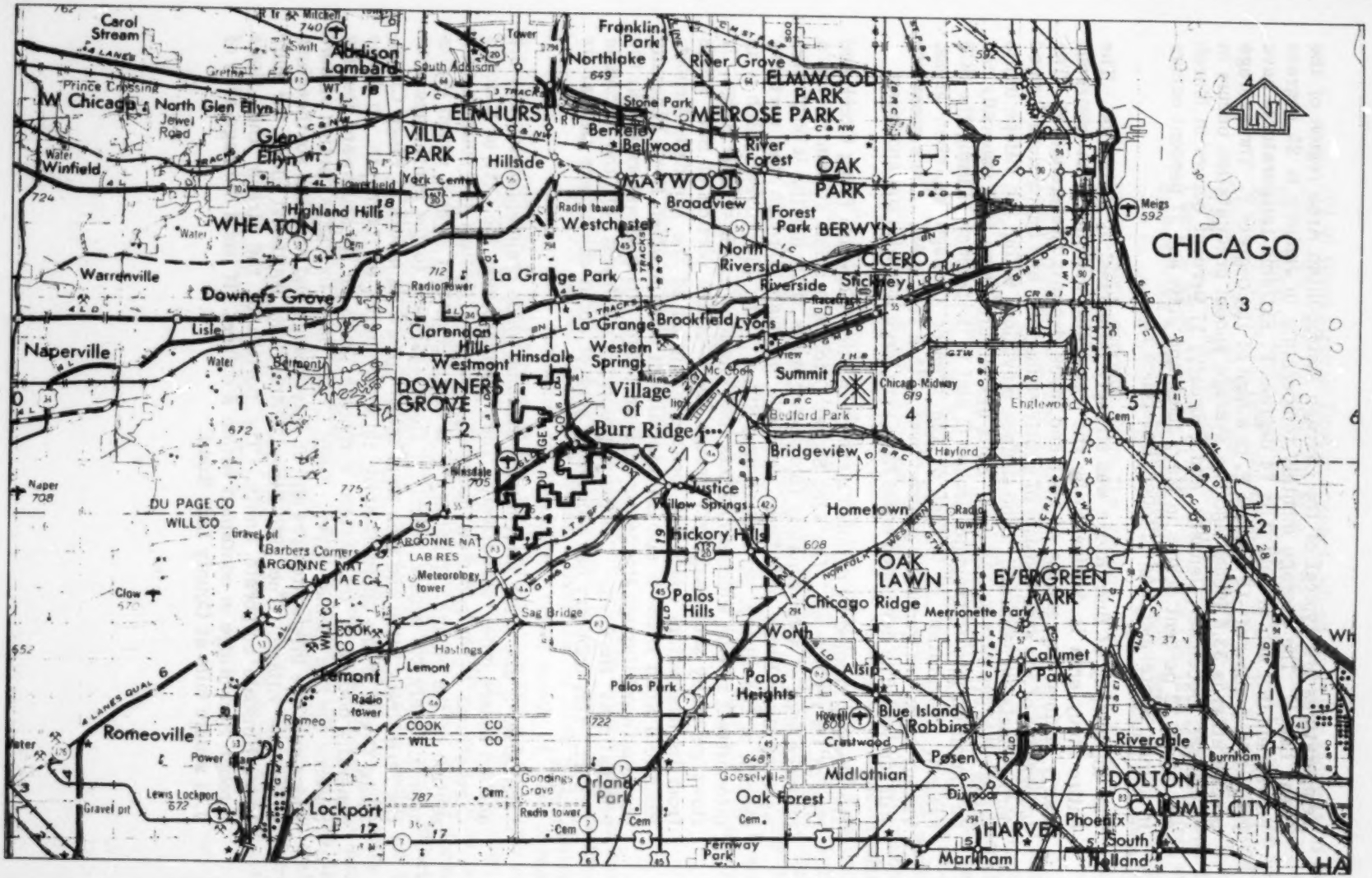
f. Tributary B within the corporate limits; and

g. Tributary C within the corporate limits.

59th Street Ditch was studied by approximate methods within the corporate limits. Unnamed Tributaries A and B were not studied because they pose no flooding problem.

2.2 Community Description

The Village of Burr Ridge is located in northeastern Illinois, in the southeastern portion of Du Page County and in southwestern Cook County. The area contained within the village limits is 3.0 square miles. Burr Ridge is located approximately 18 miles southwest of Chicago and is adjacent to Hinsdale to the north, Indian Head Park to the east, Willow Springs to the south, and Willow Brook to the west. According to the Village Office, population has increased from the 1970 Census Bureau population of 1,600 (Reference 1) to the 1976 population of 2,240.


Village of Burr Ridge
WHEATON
Naperville
Downers Grove
DOWNERS GROVE
La Grange Park
La Grange
Brookfield
Lyons
Western Springs
Hinsdale
Westmont
Clarendon Hills
Warrenville
Lisle
Winfield
Glen Ellyn
North Glen Ellyn
W Chicago
Carol Stream
Addison
Lombard
ELMHURST
VILLA PARK
Hillside
York Center
Berkeley
Bellwood
Stone Park
Northlake
Franklin Park
River Grove
ELMWOOD PARK
MELROSE PARK
River Forest
OAK PARK
MAYWOOD
Broadview
Westchester
Forest Park
BERWYN
CICERO
North Riverside
Riverside
Stickney
CHICAGO
Summit
Bedford Park
Chicago Midway
Bridgeview
Hayford
Justice
Willow Springs
Hickory Hills
Hometown
OAK LAWN
EVERGREEN PARK
Chicago Ridge
Worth
Palos Hills
Palos Heights
Palos Park
Alsip
Blue Island
Robbins
Crestwood
Posen
Midlothian
Oak Forest
Orland Park
Tinley Park
Calumet Park
Riverdale
Burnham
DOLTON
CALUMET CITY
HARVEY
Phoenix
South Holland
Markham
Romeoville
Lockport
Lemont
Sag Bridge
Hastings
Barbers Corners
ARGONNE NAT LAB RES
Meteorology tower
DU PAGE CO
WILL CO
COOK CO
Gravel pit
Lewis Lockport
Power
Radio tower
Meigs
Midway
Englewood
Metrionette Park
Calumet Park
Riverdale
Burnham
Phoenix
South Holland
Markham
HARVEY
DOLTON
CALUMET CITY
Posen
Midlothian
Oak Forest
Crestwood
Blue Island
Robbins
Alsip
Palos Heights
Palos Park
Worth
Chicago Ridge
Hometown
Hickory Hills
Justice
Willow Springs
Bridgeview
Hayford
Summit
Bedford Park
Chicago Midway
Englewood
Meigs
CHICAGO
Riverside
Stickney
North Riverside
CICERO
Forest Park
BERWYN
Broadview
Westchester
Radio tower
Maywood
Oak Park
River Forest
Elmwood Park
Melrose Park
Franklin Park
Northlake
River Grove
Addison
Lombard
Carol Stream
W Chicago
North Glen Ellyn
Glen Ellyn
Winfield
Wheaton
Warrenville
Downers Grove
Naperville
Lisle
Clarendon Hills
Westmont
Hinsdale
Western Springs
La Grange
Brookfield
Lyons
La Grange Park
Elmhurst
Villa Park
Hillside
York Center
Berkeley
Bellwood
Stone Park
Northlake
Franklin Park
River Grove
Elmwood Park
Melrose Park
River Forest
Oak Park
Maywood
Broadview
Westchester
Forest Park
Berwyn
Cicero
North Riverside
Riverside
Stickney
Chicago
Summit
Bedford Park
Chicago Midway
Bridgeview
Hayford
Justice
Willow Springs
Hickory Hills
Hometown
Oak Lawn
Evergreen Park
Chicago Ridge
Worth
Palos Hills
Palos Heights
Palos Park
Alsip
Blue Island
Robbins
Crestwood
Posen
Midlothian
Oak Forest
Orland Park
Tinley Park
Calumet Park
Riverdale
Burnham
Dolton
Calumet City
Harvey
Phoenix
South Holland
Markham
Romeoville
Lockport
Lemont
Sag Bridge
Hastings
Barbers Corners
Argonne Nat Lab Res
Meteorology tower
DU PAGE CO
WILL CO
COOK CO
Gravel pit
Lewis Lockport
Power
Radio tower
Meigs
Midway
Englewood
Metrionette Park
Calumet Park
Riverdale
Burnham
Phoenix
South Holland
Markham
Harvey
Dolton
Calumet City
Posen
Midlothian
Oak Forest
Crestwood
Blue Island
Robbins
Alsip
Palos Heights
Palos Park
Worth
Chicago Ridge
Hometown
Hickory Hills
Justice
Willow Springs
Bridgeview
Hayford
Summit
Bedford Park
Chicago Midway
Englewood
Meigs
Chicago
Riverside
Stickney
North Riverside
Cicero
Forest Park
Berwyn

Temperatures are typical of the Chicago Metropolitan Area region of the Great Lakes. The average monthly temperature in January is 25 degrees Fahrenheit (F.) and in July it is 74 degrees F. Extreme temperatures have ranged from a low of -19 degrees F. to a high of 104 degrees F. The average precipitation is 33.6 inches and the average annual precipitation occurs in November, December, January, and February; 17 percent occurs in March and April; 32 percent occurs in May, June, and July; and 27 percent occurs in August, September, and October (Reference 2).

The topography of Burr Ridge was strongly influenced by glaciation. The entire study area is dominated by the Valparaiso moraine with numerous poorly drained depressions of peat and muck deposits (Reference 3). The topography of the area consists of gently rolling hills and depressions formed during glacial movements. Land surface elevations within the village limits range from 675 feet to 735 feet. Soils in the Burr Ridge area generally can be classified into Hydrologic Groups C and D (Reference 3) using the SCS system. Vegetation is typical of the greater Chicago suburban areas. Vacant lands are generally grassed over with a few trees. Some areas are still farmed. The developed areas have very large lots with sod and trees.

The streams studied by detailed methods in Burr Ridge are Flagg Creek and five of its tributaries. The 63rd Street Ditch is a small stream having a drainage area of approximately five square miles at its mouth. It originates west of Burr Ridge and flows generally eastward through the northern section of the village, parallel to 63rd Street. The 79th Street Ditch is an intermittent stream which drains less than one square mile of Burr Ridge. It flows generally southeastward through the southern portion of Burr Ridge from its headwaters which are located southeast of the Hinsdale Airport. Plainfield Road Ditch is also an intermittent stream which flows generally northeastward through the center of Burr Ridge. Its headwaters are in the International Harvester Company property northwest of the Hinsdale Airport. This tributary has a drainage area of about one square mile at its mouth.

Tributaries A and B are intermittent streams which drain approximately 0.2 and 0.6 square mile, respectively. They originate near the City of Chicago Correctional Farm and flow generally eastward through the southeastern section of the village. Tributary C is an intermittent stream which drains approximately 3.0 square miles. It flows eastward to the confluence with the 79th Street Ditch and then turns south toward its mouth at Flagg Creek. Flagg Creek drains approximately 18 square miles at its mouth. It flows generally outside of the eastern corporate limits on its southward journey towards the Des Plaines River. Flagg Creek flows through a portion of Burr Ridge near the Interstates 294 and 66 Interchange and near the southeastern tip of the village. The 59th Street Ditch flows southeast along the Burr Ridge-Hinsdale corporate limits. The portion of the stream that flows through Burr Ridge is contained within a culvert. It has a drainage area of 0.51 square mile at County Line Road.

All of these streams flow in channels which generally range from two to five feet lower than the adjacent area. The streambed of the 63rd Street Ditch has a slope of approximately 19 feet per mile; the slope for the 79th Street Ditch is about 25 feet per mile; the slope for Plainfield Road Ditch is approximately 33 feet per mile; the slope for Tributaries A, B, and C are about 43, 36, and 48 feet per mile, respectively; and the slope for Flagg Creek is approximately 21 feet per mile. The 59th Street Ditch, studied by approximate methods, is a tributary of Flagg Creek. It has a drainage area of 0.84 square mile at the Tri-State Tollway. It flows southeasterly through underground conduits from the western corporate limit 1,900 feet to the Tri-State Tollway.

The village is primarily residential with only a small amount of commercial and business activity. Flood plain development is not very great in Burr Ridge. The flood plain of 63rd Street Ditch contains developed land only along Elm Street. The flood plain of 79th Street Ditch includes residential development on both sides of Hamilton Street and on the north side of 79th Street. Future residential development will occur on the west side of County Line Road. The rest of the flood plain remains undeveloped. The Plainfield Road Ditch flood plain west of County Line Road consists of the International Harvester Company and private farms. Land east of County Line Road is mostly residential with some undeveloped land. Agricultural land is found in the 1,500 feet just upstream of the Tri-State Tollway on Plainfield Road Ditch. The flood plain of the 59th Street Ditch is developed residentially. The flood plains of Tributary A and Tributary B are mostly undeveloped land with a few homes. The Flagg Creek and Tributary C flood plains are undeveloped.

2.3 Principal Flood Problems

Frequent residential damage occurs in one area in the Village of Burr Ridge. Flooding problems principally are caused by development in low lands which formerly served as natural drains. Overflow of 79th Street Ditch causes damage to a residence on Hamilton Avenue south of 77th Street. The channel of this stream is not well-defined in many places. This results in flooding of streets and yards in the area south of the intersection of 79th Street and Drew Avenue. Flooding at Plainfield Road Ditch occurs on farmland just west of the Tri-State Tollway and, in a milder form, at the International Harvester Company. No buildings are flooded. In both cases, shallow channels contribute to the flooding. Flooding occurs on the 59th Street Ditch when flow from upstream exceeds the capacity of the underground conduit system. Floodwaters flow through the subdivision known as Wood View Estates. On the east side of the subdivision, the water flows into a drainage ditch along the Tri-State Tollway. The water then flows south into 63rd Street Ditch, then east into Flagg Creek. There are no known flooding problems for Flagg Creek and Tributaries A, B, and C within the Burr Ridge corporate limits.

There are no stream gages on the streams in Burr Ridge. However, major floods on the tributaries of Flagg Creek in Burr Ridge can be documented from U.S. Geological Survey (USGS) gage records for Flagg Creek at Willow Springs (Reference 4). This gage (No. 05533000, drainage area 16.2 square miles) was established in 1951, and has a continuous record to the present. Historic floods recorded at this gage are:

Water Year	Discharge cubic feet per second (cfs)	Approximate Reccurence Interval years
1961 *	2,680	85
1976	2,230	40
1975	1,630	15
1959	1,550	12
1957	1,350	8
1955	1,300	7

*Provisional, subject to review by the USGS.

2.4 Flood Protection Measures

The Village of Burr Ridge has taken an active interest in solving its flooding problems, including contracting with Lindley and Sons, Inc. to investigate the problem.

The retention pond near the mouth of 63rd Street Ditch has been designed to retain 100-year flood flows for a short period of time without affecting the surrounding homes. There is a small lake on the International Harvester Company property along Plainfield Road Ditch. Some flood runoff will spill into this lake, but the lake is too small to reduce the peak flood discharge.

All of 59th Street Ditch within the Village of Hinsdale flows through an underground culvert. For small flood events the flow is contained in a culvert. For large floods the culvert becomes surcharged and ponding occurs in the low-lying areas above the underground culvert. Tne culvert is incapable of containing the 100-year storm, thus causing overland flow.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (one percent chance of annual occurrence) in any 50-year period is about 40 percent (four in ten), and for any 90-

year period, the risk increases to about 60 percent (six in ten). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail affecting the community.

For Flagg Creek, the 10-, 50-, 100-, and 500-year discharges were computed using a log-Pearson Type III statistical analysis (Reference 5) of gage records (Reference 4). Discharges for the 10-, 50-, and 100-year floods on 63rd Street Ditch, 79th Street Ditch, Tributaries A, B, and C, and Plainfield Road Ditch were determined by Harza using regional flood-frequency equations. The parameters used were channel slope, drainage area, and the percent of urbanization of watershed (Reference 6). The discharges were adjusted for urbanization and nearby gage records using methods recommended by the Illinois SWS. These methods were determined by the log-Pearson Type III analysis and the regional discharge equation at gage location (Reference 7). The adjustment coefficients were developed from data for the USGS gage (No. 05533000, established in 1951), located at the 16.2-mile marker on Flagg Creek at Willow Springs, Illinois. The 100-year discharges for the streams were sent to the Illinois SWS for review. They were approved by the Illinois SWS and certified by the Illinois DWR for use in the state's flood plain regulation program (Reference 8). Data are located in the State Flood Plain Repository administered by the Illinois SWS.

Discharges for the 10-, 50-, and 100-year floods were plotted on log-normal probability paper, and the 500-year discharges were estimated by straight-line extrapolation. The 500-year discharges are less reliable than the others because (1) the period of gage record is only 26 years, (2) the average period of record for gages used to develop the regional equations is about 30 years, and (3) the average period of record for gages used to develop the urbanization adjustment is about 10 years.

The flood discharges on Plainfield Road Ditch are much higher than the discharges of 79th Street Ditch because the slope of Plainfield Road Ditch is 30 percent greater than the slope of 79th Street Ditch, thereby increasing the rate of runoff.

All hydrologic information for Flagg Creek and Tributaries A, B, and C was obtained from the Cook County Flood Insurance Study (Reference 9).

Peak discharges for the 10-, 50-, 100-, and 500-year floods of each flooding source studied in detail in the community are shown in Table 1.

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
63RD STREET DITCH					
At the mouth	4.9	710	1,130	1,330	1,850
At County Line Road	3.7	565	900	1,070	1,490
At Madison Street	2.2	390	620	729	1,010
79TH STREET DITCH					
At County Line Road	1.0	91	141	165	226
At 79th Street	0.9	77	118	140	190
At Hamilton Street	0.8	57	90	105	145
PLAINFIELD ROAD DITCH					
At the mouth	1.1	197	310	367	510
At County Line Road	1.0	141	223	262	365
TRIBUTARY A					
At the mouth	0.2	120	220	300	460
TRIBUTARY B					
At the mouth	0.6	160	300	460	610
TRIBUTARY C					
At the mouth	3.0	350	500	640	880
FLAGG CREEK					
At the mouth	18.1	1,660	2,650	3,180	4,500
Approximately 600 feet upstream of 79th Street Ditch	15.3	1,420	2,300	2,720	3,850

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the streams in the community were carried out to provide estimates of the elevations of the floods of the selected recurrence intervals along each flooding source studied in detail.

All hydraulic information for Flagg Creek and Tributaries A, B, and C was obtained from the Cook County Flood Insurance Study (Reference 9). Cross section data for the 63rd Street Ditch were obtained from the SCS Flood Plain Information Maps and Profiles (Reference 8) and were supplemented with data from the Improvement Plan for Burr Ridge Meadows (Reference 7). Land surveys provided cross section data for the other detailed studied streams.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Roughness coefficients (Manning's "n" values) for these computations were assigned on the basis of field inspection. The range of "n" values for the streams in Hinsdale are:

STREAM	ROUGHNESS COEFFICIENTS MANNING'S "n" VALUES	
	Channel	Overbank
63rd Street Ditch	0.017-0.040	0.025-0.060
79th Street Ditch	0.048-0.055	0.032-0.085
Plainfield Road Ditch	0.035-0.050	0.030-0.090
Flagg Creek	0.035-0.070	0.060-0.085
Tributary A	0.040	0.035-0.050
Tributary B	0.035-0.068	0.032-0.075
Tributary C	0.055	0.070

The starting water-surface elevation for Flagg Creek was the 10-year flood elevation for the Des Plaines River (Reference 8). Critical depth was used for the starting water-surface elevation for 63rd Street Ditch, Tributary A, and Tributary B. 79th Street Ditch used the backwater from Tributary C. The starting water-surface elevation for Plainfield Road Ditch was obtained from the Indian Head Park Flood Insurance Study (Reference 10). The starting water-surface elevations for Tributary C were obtained from the Cook County Flood Insurance Study (Reference 9).

Water-surface elevations for floods of selected recurrence intervals were computed using the SCS WSP-2 step-backwater program (Reference 11). Mathematical relationships used in the program include the standard step-

backwater procedure which estimates total energy at each cross section and accounts for friction losses between sections using Manning's formula. The model requires discharge, cross section geometry, bridge geometry, starting water-surface elevation, and roughness data to simulate flood flow conditions.

For 59th Street Ditch studied by approximate methods, the elevation of the 100-year flood was developed from normal depth calculations, consultation with the village engineer, and the Hydrologic Investigation Atlas for Hinsdale (Reference 12).

Flood profiles were drawn showing the computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals (Exhibit 1).

The hydraulic analyses for this study are based only on the effects of unobstructed flow. The flood elevations as shown on the profiles are, therefore, considered valid only if hydraulic structures, in general, remain unobstructed and if channel and overbank conditions remain essentially the same as ascertained during this study.

All elevations are referenced from National Geodetic Vertical Datum of 1929 (NGVD); elevation reference marks used in the study are shown on the maps.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the FIA as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100-year and the 500-year floods have been delineated using the elevations determined at each cross section; between cross sections the boundaries were interpolated using topographic maps. The topographic maps used to delineate flood boundaries for 63rd Street Ditch and Flagg Creek have a scale of 1:4800, with a contour interval of two feet (Reference 13). The topographic maps used to delineate flood boundaries for 79th Street Ditch, Tributaries A, B, and C, and Plainfield Road Ditch have a scale of 1:24000, with a contour interval of five feet (Reference 14). Flood boundaries for Flagg Creek and Tributaries A, B, and C were obtained from the Cook County Flood Insurance Study (Reference 9).

For 59th Street Ditch studied by approximate methods, the boundary of the 100-year flood was determined from the Hydrologic Investigation Atlas for Hinsdale (Reference 10). The area of flooding shown on the Flood Hazard Boundary Map located south of Interstate Highway 55 near the 79th Street Ditch has been added to the Flood Boundary and Floodway Map (Reference 15). The approximate flooding boundaries shown in the southern portion of the village was taken from the Du Page County Flood Insurance Study (Reference 16).

The boundaries of the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map (Exhibit 2). Small areas within the flood boundaries may lie above the flood elevations and, therefore, not be subject to flooding; owing to lack of detailed topographical information or to limitations of the map scale, such areas are not shown. In cases where the 100-year and the 500-year flood boundaries are close together, only the 100-year boundary has been shown.

Certain areas shown on the Flood Hazard Boundary Map (Reference 15) were determined to be areas of minimal flooding and, as such, have not been included on the Flood Boundary and Floodway Map and the Flood Insurance Rate Map.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood may be carried without substantial increases in flood heights. Minimum standards of the FIA limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. In Illinois, though, under Revised Statutes, Section 65f, Chapter 19 as amended 1973 (Reference 17), encroachment in the flood plain is limited to that which will cause only an insignificant increase in flood heights. Thus, at the recommendation of the Illinois DWR, a floodway having no more than a 0.1-foot surcharge has been delineated for this study (Reference 18).

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the flood plain. The floodways were computed without consideration of backwater effects from Flagg Creek.

Floodways for Flagg Creek and Tributaries A, B, and C were obtained from the Cook County Flood Insurance Study (Reference 9).

The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was computed (Table 2).

As shown on the Flood Boundary and Floodway Map (Exhibit 2), the floodway boundaries were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 100-year flood are either close together or collinear, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 0.1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

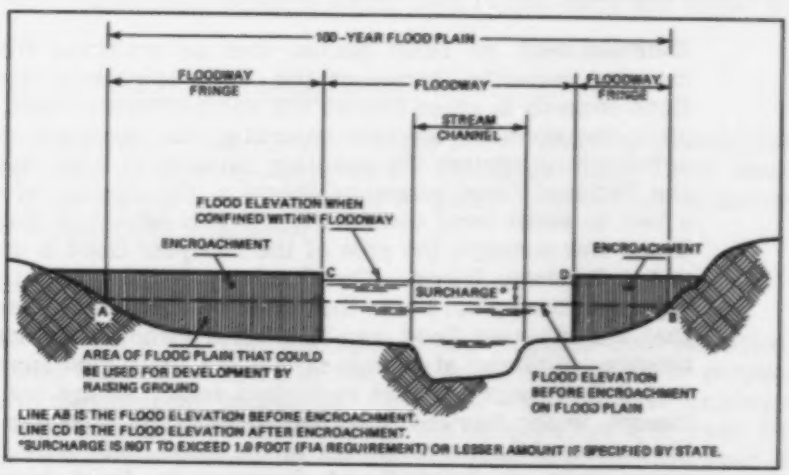

100-YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE *
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE AB IS THE FLOOD ELEVATION BEFORE ENCROACHMENT.
LINE CD IS THE FLOOD ELEVATION AFTER ENCROACHMENT.
*SURCHARGE IS NOT TO EXCEED 1.0 FOOT (FIA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

FIGURE 2 - Floodway Schematic

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, the FIA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHF), and flood insurance zone designations for each flooding source affecting the Village of Burr Ridge.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION		
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	WITH FLOODWAY (NGVD)	WITHOUT FLOODWAY (NGVD)	DIFFERENCE
63rd STREET DITCH							
A	525	92	226	5.89	641.8	641.7	0.1
B	655	88	200	6.64	642.3	642.2	0.1
C	875	61	216	6.15	645.5	645.4	0.1
D	998	90	434	3.06	647.0	646.9	0.1
E	1438	271	814	1.63	647.4	647.3	0.1
F	1496	283	562	2.36	652.7	652.6	0.1
G	2440	93	223	4.79	659.0	658.9	0.1
H	3910	86	330	3.24	671.8	671.7	0.1
I	6520	216	370	2.88	679.2	679.1	0.1
J	7700	186	556	1.92	685.2	685.1	0.1
K	11,080	83	178	4.11	701.9	701.8	0.1
79th STREET DITCH							
A	760[2]	26	45	3.80	680.0	679.9	0.1
B	905[2]	71	574	0.30	689.2	689.1	0.1
C	1155[2]	81	343	0.50	689.2	689.1	0.1
D	1400[2]	43	128	1.29	689.4	689.3	0.1
E	1555[2]	230	725	0.23	690.2	690.1	0.1
F	1835[2]	92	127	1.30	690.6	690.5	0.1
G	2295[2]	103	66	2.13	691.6	691.5	0.1
H	3025[2]	323	499	0.28	691.7	691.6	0.1
I	3165[2]	36	47	2.99	691.8	691.7	0.1
J	3425[2]	36	55	2.55	692.5	692.4	0.1
K	4145[2]	37	70	1.51	693.6	693.5	0.1
L	4285[2]	29	45	2.33	694.1	694.0	0.1
M	5195[2]	30	51	1.54	695.3	695.2	0.1

[1]FEET ABOVE MOUTH
[2]FEET ABOVE CONFLUENCE WITH TRIBUTARY C

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

FLOODWAY DATA

63RD STREET DITCH - 79TH STREET DITCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION		
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	WITH FLOODWAY (NGVD)	WITHOUT FLOODWAY (NGVD)	DIFFERENCE
PLAINFIELD ROAD DITCH							
A	465	42	57	6.39	638.6	638.5	0.1
B	495	50	60	6.12	643.8	643.7	0.1
C	680	126	101	3.64	645.4	645.3	0.1
D	1030	28	61	4.33	647.8	647.7	0.1
E	1535	43	60	4.37	651.6	651.5	0.1
F	1780	50	116	2.26	654.9	654.8	0.1
G	2020	39	62	4.24	656.8	656.7	0.1
H	2640	33	52	5.00	665.9	665.8	0.1
I	3195	29	51	5.09	674.3	674.2	0.1
J	3330	14	32	8.08	680.7	680.6	0.1
K	3375	16	34	7.81	682.1	682.0	0.1
L	3406	35	41	6.34	692.4	692.3	0.1
M	3450	25	73	3.60	693.1	693.0	0.1
N	4030	29	74	3.55	694.4	694.3	0.1
O	5125	61	91	1.99	696.9	696.8	0.1
P	7440	39	75	1.76	704.7	704.6	0.1
Q	9190	42	95	1.39	705.9	705.8	0.1
R	10,290	180	457	0.15	705.9	705.8	0.1

[1]FEET ABOVE MOUTH

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration
VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

FLOODWAY DATA

PLAINFIELD ROAD DITCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION		
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	WITH FLOODWAY (NGVD)	WITHOUT FLOODWAY (NGVD)	DIFFERENCE
FLAGG CREEK							
A	14,475	200[2]	949	2.9	625.4	625.3	0.1
B	20,980	80[2]	605	4.0	634.4	634.3	0.1
TRIBUTARY A							
A	1025	110	117	1.3	632.5	632.5	0.0
B	1425	60	45	3.3	636.6	636.6	0.0
C	1790	17	31	4.8	639.8	639.7	0.1
D	2490	80	219	0.7	648.4	648.4	0.0
E	2620	74	179	0.8	648.5	648.4	0.1
TRIBUTARY B							
A	600	79	106	2.6	629.0	628.9	0.1
B	740	150	130	3.1	630.7	630.7	0.0
C	800	110	188	2.1	633.2	633.2	0.0
D	860	150	447	0.9	634.4	634.4	0.0
E	1140	149	437	0.6	635.1	635.0	0.1
F	2100	131	84	2.5	642.6	642.5	0.1
G	2150	100	329	0.9	644.0	644.0	0.0
H	2200	50	88	2.3	645.1	645.0	0.1
TRIBUTARY C							
A	7835	33	108	2.9	672.6	672.5	0.1

[1]FEET ABOVE MOUTH
[2]THIS WIDTH IS BEYOND CORPORATE LIMITS

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

FLOODWAY DATA

FLAGG CREEK - TRIBUTARY A - TRIBUTARY B - TRIBUTARY C

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

Average Difference Between 10- and 100-year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

The locations of the reaches determined for the Village of Burr Ridge are shown on the Flood Profiles (Exhibit 1) and are summarized in the Flood Insurance Zone Data Table (Table 3).

5.2 Flood Hazard Factors

The FHF is used to correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHFs are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest 0.5 foot, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year water-surface elevations is greater than 10.0 feet, accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHFs, the entire incorporated area of the Village of Burr Ridge was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

Zones A1-A3: Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations are shown, and zones subdivided according to FHF.

Zone B: Areas between the Special Flood Hazard Area and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water

control structure; or areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.

Zone C: Areas of minimal flooding.

Table 3, "Flood Insurance Zone Data," summarizes the flood elevation differences, FHFs, flood insurance zones, and base flood elevations for each flooding source studied in detail in the community.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the Village of Burr Ridge is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by the FIA.

6.0 OTHER STUDIES

In 1975, the Des Plaines River Steering Committee, assisted by the SCS, the Metropolitan Sanitary District of Greater Chicago, and the Illinois Department of Conservation completed a Flood Plain Information (FPI) study on the Des Plaines River and its tributaries (Reference 8). That study included Flagg Creek and 63rd Street Ditch. For this Flood Insurance Study, Harza modified the WSP-2 model of the FPI study to include two additional bridges and to account for increased vegetation in the channel of Flagg Creek. The WSP-2 model of the FPI study for 63rd Street Ditch was modified to show recent construction just west of Interstate Highway 294. The construction included the dredging of Busby Pond and lining of the channel bottom and sides with rip-rap. These modifications caused the base flood elevations to be two feet lower in this study than those in the FPI study.

In May 1976, Lindley and Sons, Inc. completed a Drainage Study on a tributary to the 63rd Street Ditch and on 79th Street Ditch for the Village of Burr Ridge (Reference 19). They recommended measures to alleviate flood damage in these two areas including construction of some swales and drains, cleaning of stream channels, and enforcement of drainage detention ordinances. The profiles in this report are in agreement with this Flood Insurance Study.

The Improvement Plan for Burr Ridge as prepared by Baranecki, Vigilio, and Associates is compatible to this study (Reference 7). Data from this report were used in the preparation of this Flood Insurance Study.

This Flood Insurance Study is compatible with the Flood Insurance Studies prepared for the Villages of Hinsdale, Willow Springs, and Willowbrook and the unincorporated areas of Cook and Du Page Counties (References 20, 21, 22, 9, and 16). The Village of Indian Head Park Flood Insurance Study (Reference 10) is

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
63RD STREET DITCH							
REACH 1	0001	–1.0	–0.2	0.5	010	A2	VARIES–SEE MAP
79TH STREET DITCH							
REACH 1	0003	–1.4	–0.3	1.1	015	A3	VARIES–SEE MAP
REACH 2	0003	–0.5	–0.1	0.3	005	A1	VARIES–SEE MAP
PLAINFIELD ROAD DITCH							
REACH 1	0001,0003	–0.7	–0.2	0.4	005	A1	VARIES–SEE MAP
FLAGG CREEK							
REACH 1[4]	0003	–1.3	–0.4	1.0	015	A3	VARIES–SEE MAP
REACH 2[5]	0001	–2.5	–0.7	1.4	025	A5	VARIES–SEE MAP

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT
[4]DATA FOR THIS REACH TAKEN FROM COOK COUNTY, ILLINOIS FIS
[5]DATA FOR THIS REACH TAKEN FROM INDIAN HEAD PARK, ILLINOIS FIS

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration
VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

FLOOD INSURANCE ZONE DATA

63RD STREET DITCH - 79TH STREET DITCH
PLAINFIELD ROAD DITCH - FLAGG CREEK

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
TRIBUTARY A							
REACH 1[4]	0003	–0.7	–0.2	0.4	005	A1	VARIES–SEE MAP
TRIBUTARY B							
REACH 1[4]	0003	–1.5	–0.4	0.8	015	A3	VARIES–SEE MAP
REACH 2[4]	0003	–0.5	–0.1	0.2	005	A1	VARIES–SEE MAP
TRIBUTARY C							
REACH 1	0003	–1.2	–0.4	2.7	010	A2	VARIES–SEE MAP

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT
[4]DATA FOR THIS REACH TAKEN FROM COOK COUNTY, ILLINOIS FIS

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL

(DU PAGE AND COOK COS.)

FLOOD INSURANCE ZONE DATA

TRIBUTARY A - TRIBUTARY B - TRIBUTARY C

compatible with this study except for the flood boundaries along Flagg Creek. The differences occurred because the Village of Burr Ridge used a more detailed topographic map to delineate the flood boundaries.

A Flood Hazard Boundary Map has been published by the Federal Insurance Administration (Reference 15). The differences between the Flood Hazard Boundary Map and this study are justified due to the more detailed nature of this Flood Insurance Study.

This report either supersedes or is compatible with all previous studies published on streams studied in this report and should be considered authoritative for the purposes of the National Flood Insurance Program.

7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic and other pertinent data used in this study can be obtained by contacting the Insurance and Mitigation Division, Federal Emergency Management Agency, One North Dearborn Street, Chicago, Illinois 60602.

8.0 REFERENCES AND BIBLIOGRAPHY

1. U.S. Department of Commerce, Bureau of the Census, 1970 Census of Population, Number of Inhabitants, Illinois Final Report PC (1)-A15.

2. ————, National Oceanic and Atmospheric Administration, Environmental Data Service, Climatological Data, Illinois, Asheville, North Carolina, 1975.

3. University of Illinois, Department of Agronomy, Agricultural Experiment, Station, Illinois Soil Type Descriptions, A61443, H.L. Wascher, J.B. Fahrenbacker, R.T. Odell, and P.T. Veale, 1950.

4. U.S. Geological Survey, Water Resources Data for Illinois, Part 1, Surface Water Records, Champaign, Illinois, Annual.

5. U.S. Water Resources Council, Hydrology Committee, Bulletin No. 17, Guidelines for Determining Flood Flow Frequency, March 1976.

6. Illinois Department of Transportation, Division of Water Resources, Magnitude and Frequency of Floods in Illinois, Jack M. Carns, 1973.

7. Baranecki, Vigilio, and Associates, Improvement Plans for Burr Ridge Meadows, Phase I, Burr Ridge, Illinois, December 1977.

8. Des Plaines River Steering Committee, assisted by the U.S. Department of Agriculture, Soil Conservation Service, and Metropolitan Sanitary District of Greater Chicago, Flood Plain Information Maps and Profiles, Cook and Du Page Counties, Illinois, 1975.

9. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Unincorporated Areas of Cook County, Illinois, (in progress).

10. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, Village of Indian Head Park, Illinois, December 1979.

11. U.S. Department of Agriculture, Soil Conservation Service, Technical Release No. 61, WSP-2 Computer Program, May 1976.

12. U.S. Geological Survey, in cooperation with Northeastern Illinois Planning Commission, Hydrologic Investigations Atlases, Floods in Hinsdale Quadrangle, Illinois, Scale 1:24000, Contour Interval five feet: 1964.

13. U.S. Department of Agriculture, in cooperation with the Metropolitan Sanitary District of Greater Chicago, Orthophoto Maps, Scale 1:4800, Contour Interval two feet: Burr Ridge, Illinois, 1972.

14. U.S. Geological Survey, 7.5 Minute Series Quadrangle Map for Illinois, Scale 1:24000, Contour Interval five feet: Hinsdale and Sag Bridge, Illinois, (photorevised) 1973.

15. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Village of Burr Ridge, Illinois, August 1975.

16. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Unincorporated Areas of Du Page County, Illinois, (in progress).

17. Illinois Department of Transportation, Division of Water Resources, Rules and Regulations, Regulation of Construction Within Flood Plains Established Pursuant to Section 65f, Chapter 19, Illinois Revised Statutes, Springfield, Illinois, 1973.

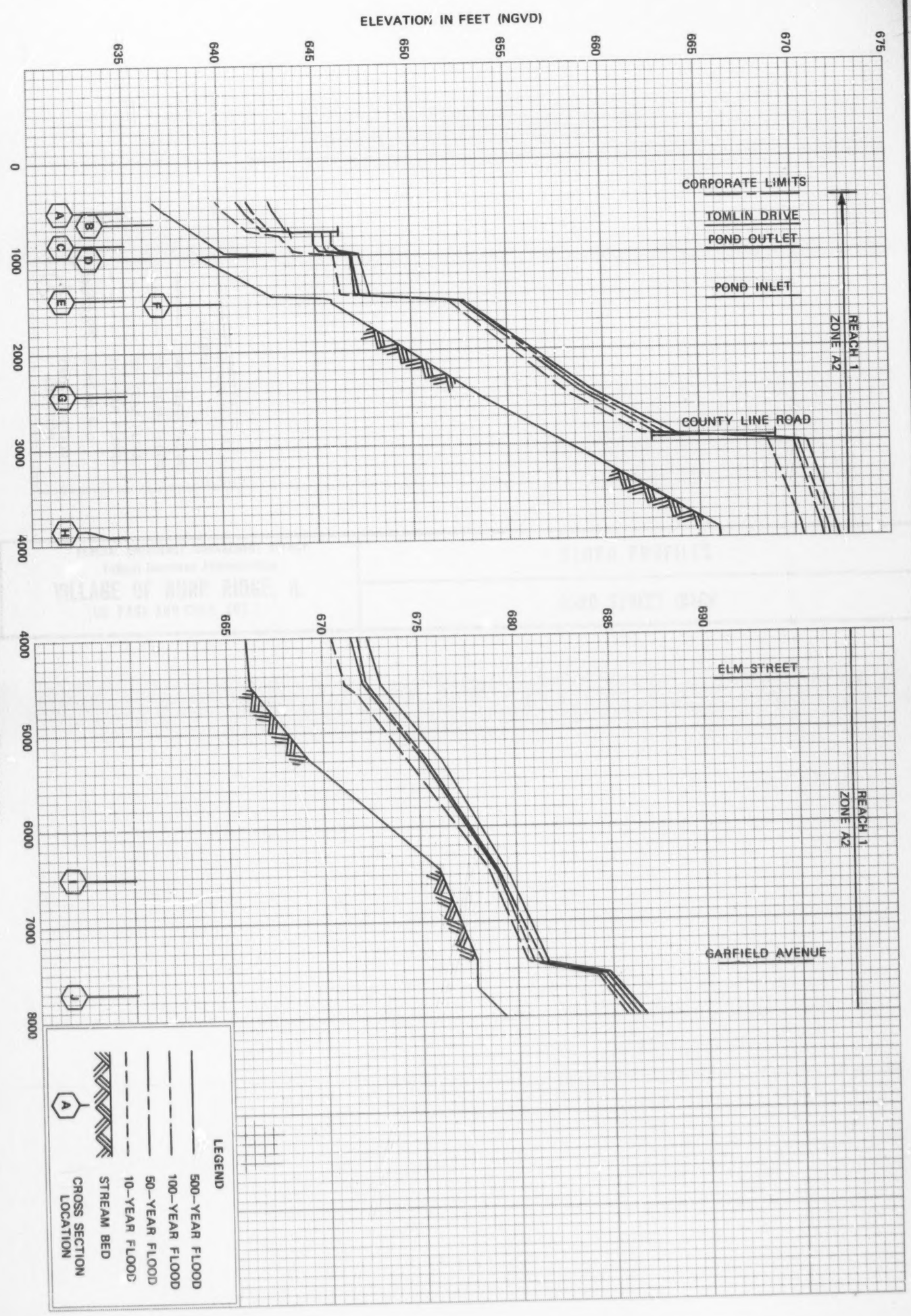
18. Illinois State Water Survey Division, and Illinois Division of Water Resources, Governor's Task Force on Flood Control, State of Illinois Guidelines for Flood Plain Studies, March 1975.

19. Lindley and Sons, Inc., Drainage Study, Village of Burr Ridge, Illinois, 1976.

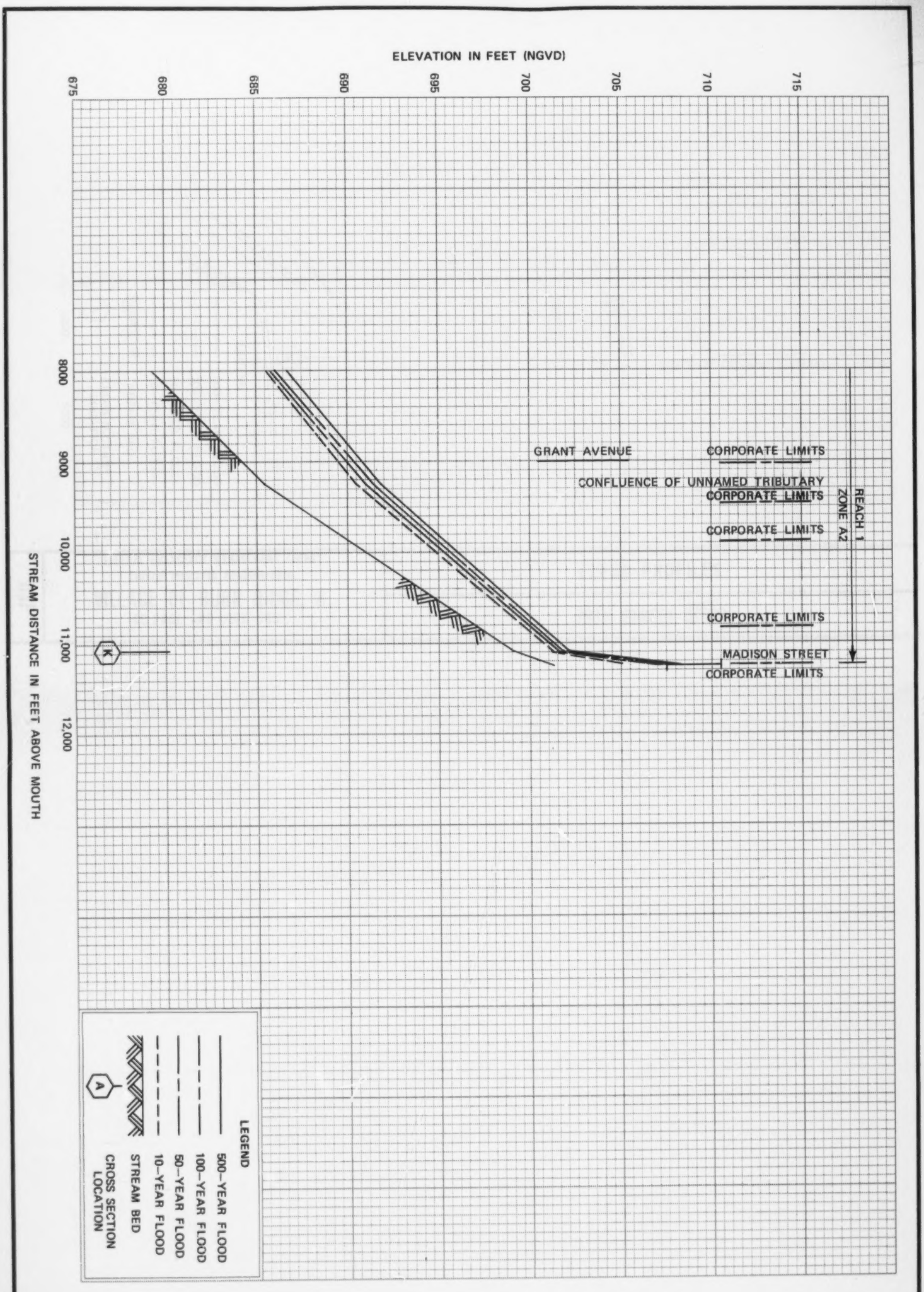
20. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Village of Hinsdale, Illinois, (in progress).

21. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, Village of Willow Springs, Illinois, July 1979.

22. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Village of Willowbrook, Illinois, January 1980.



01P	FEDERAL EMERGENCY MANAGEMENT AGENCY Federal Insurance Administration **VILLAGE OF BURR RIDGE, IL** (DU PAGE AND COOK COS.)	**FLOOD PROFILES** **63RD STREET DITCH**



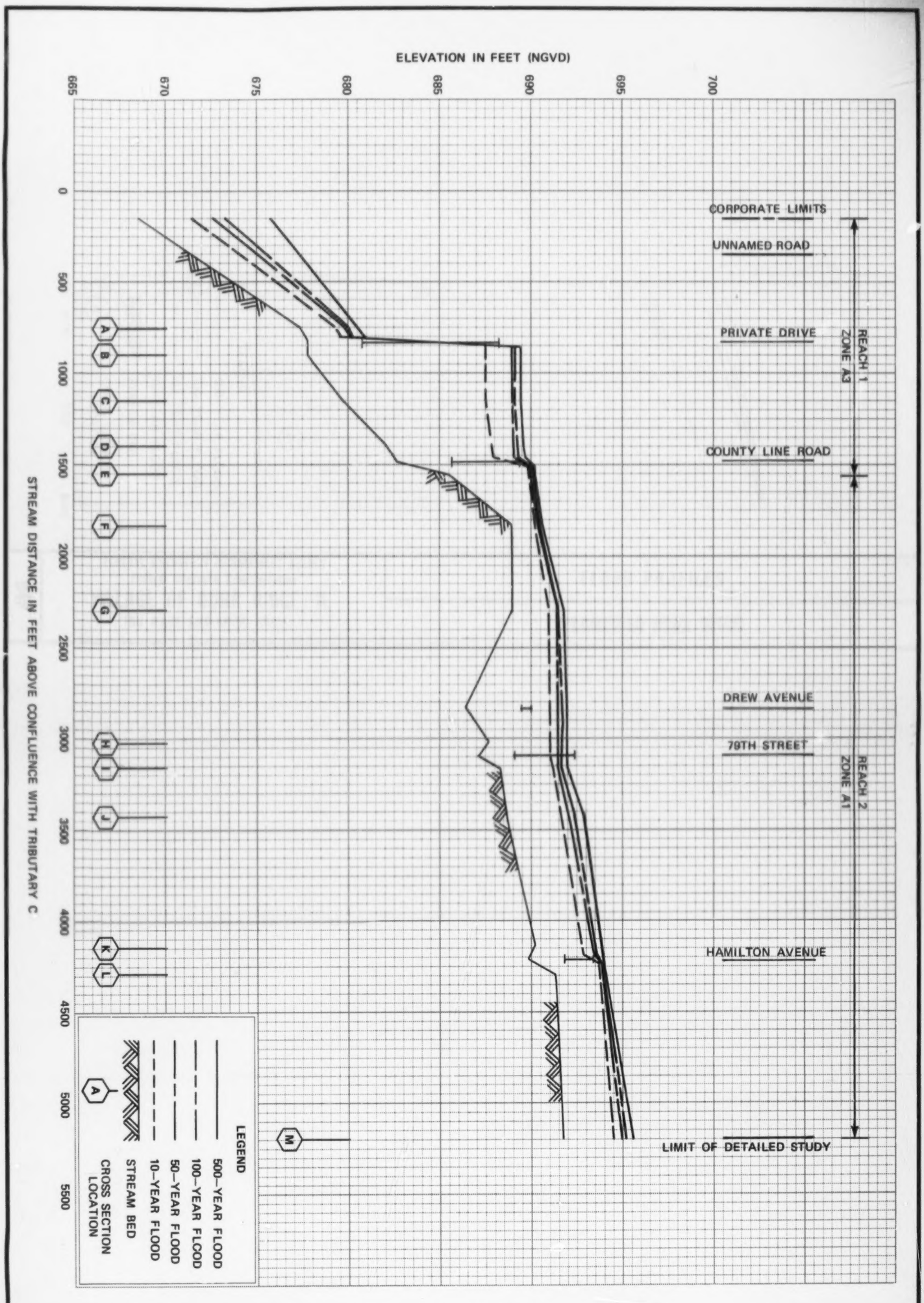
02P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

FLOOD PROFILES

63RD STREET DITCH



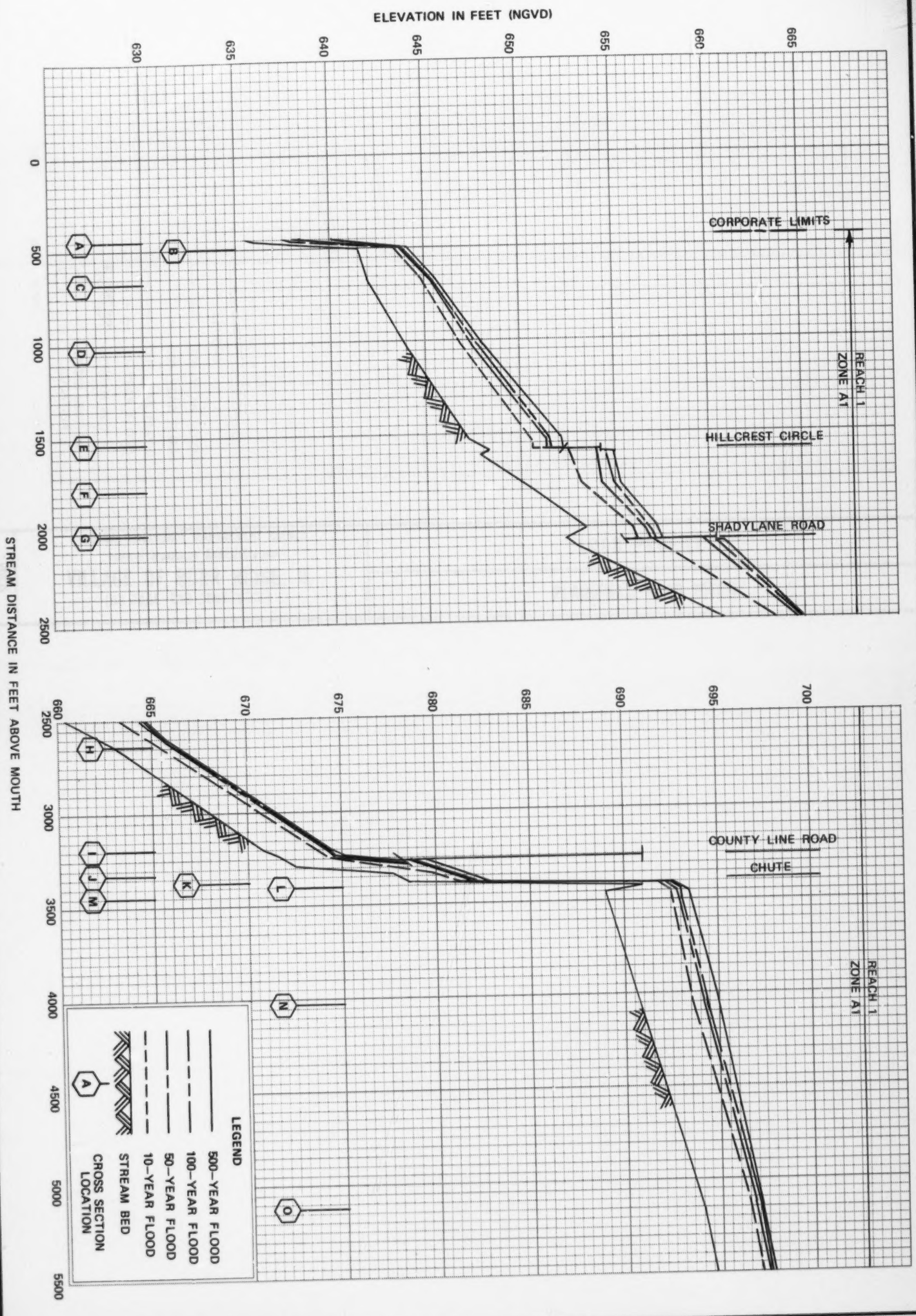
03P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

FLOOD PROFILES

79TH STREET DITCH



04P

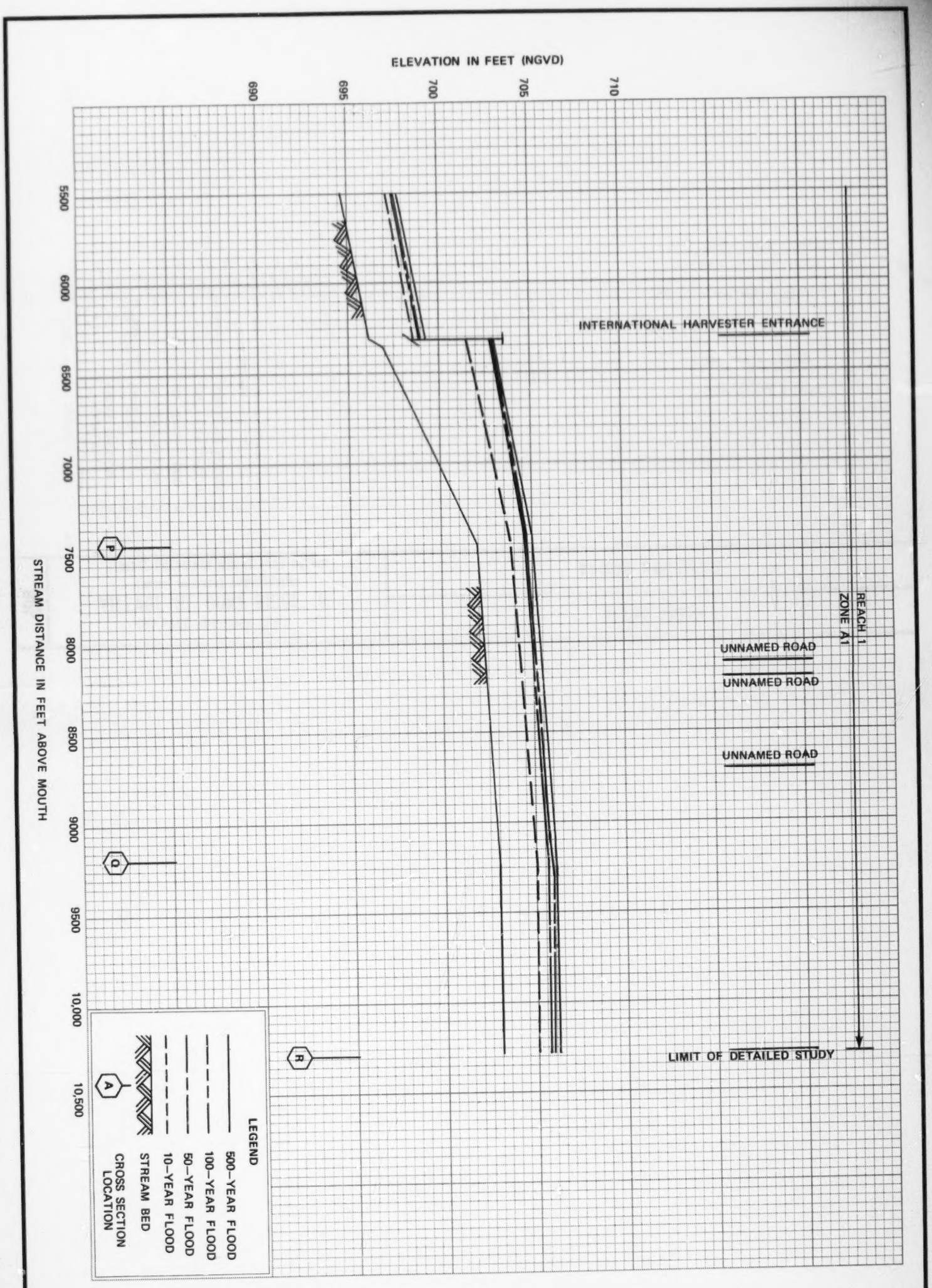
FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL

(DU PAGE AND COOK COS.)

FLOOD PROFILES

PLAINFIELD ROAD DITCH



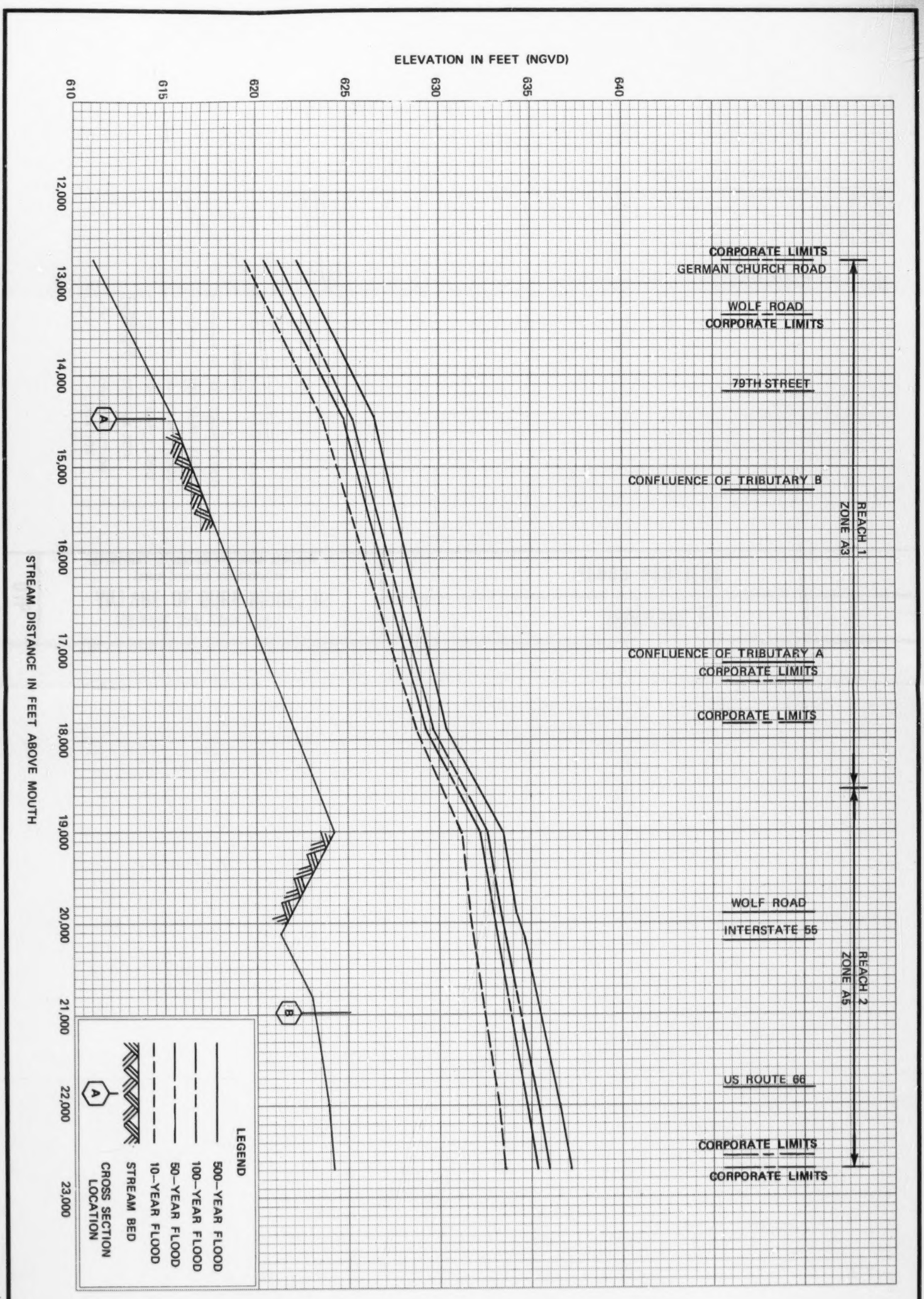
05P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

FLOOD PROFILES

PLAINFIELD ROAD DITCH



06P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL

(DU PAGE AND COOK COS.)

FLOOD PROFILES

FLAGG CREEK

FLOOD PROFILES

TRIBUTARY A

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

07P

REACH 1
ZONE A3

REACH 2
ZONE A1

CORPORATE LIMITS
WOLF ROAD

77TH STREET

DRIVEWAY

DRIVEWAY

DRIVEWAY

CONFLUENCE OF UNNAMED TRIBUTARY B

DRIVEWAY

DRIVEWAY

77TH STREET

FOREST HILL ROAD

ELEVATION IN FEET (NGVD)

650
645
640
635
630
625
620

A B C D E F G H

400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600

STREAM DISTANCE IN FEET ABOVE MOUTH

LEGEND

500–YEAR FLOOD
100–YEAR FLOOD
50–YEAR FLOOD
10–YEAR FLOOD
STREAM BED
A CROSS SECTION LOCATION

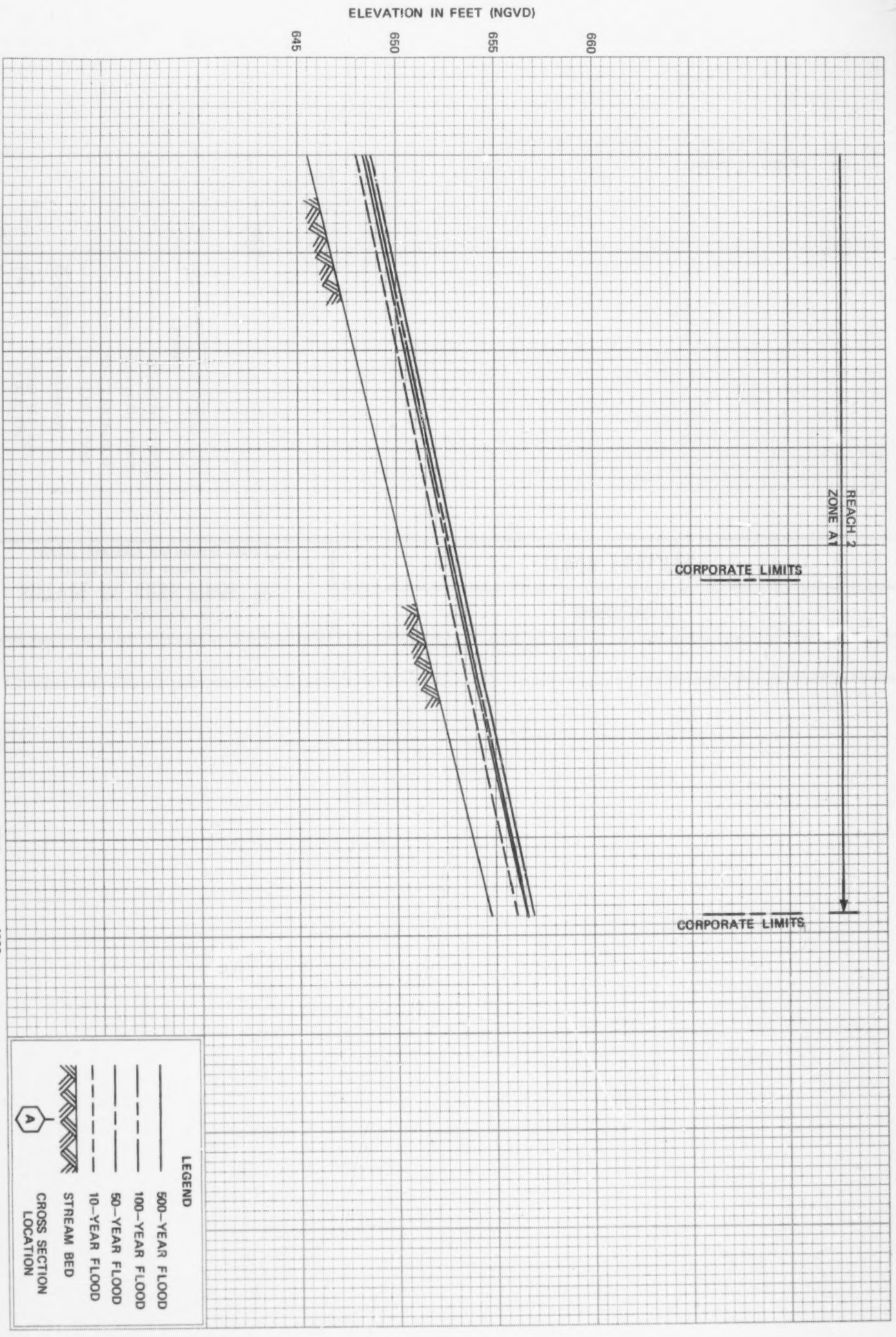
FLOOD PROFILES

TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

08P



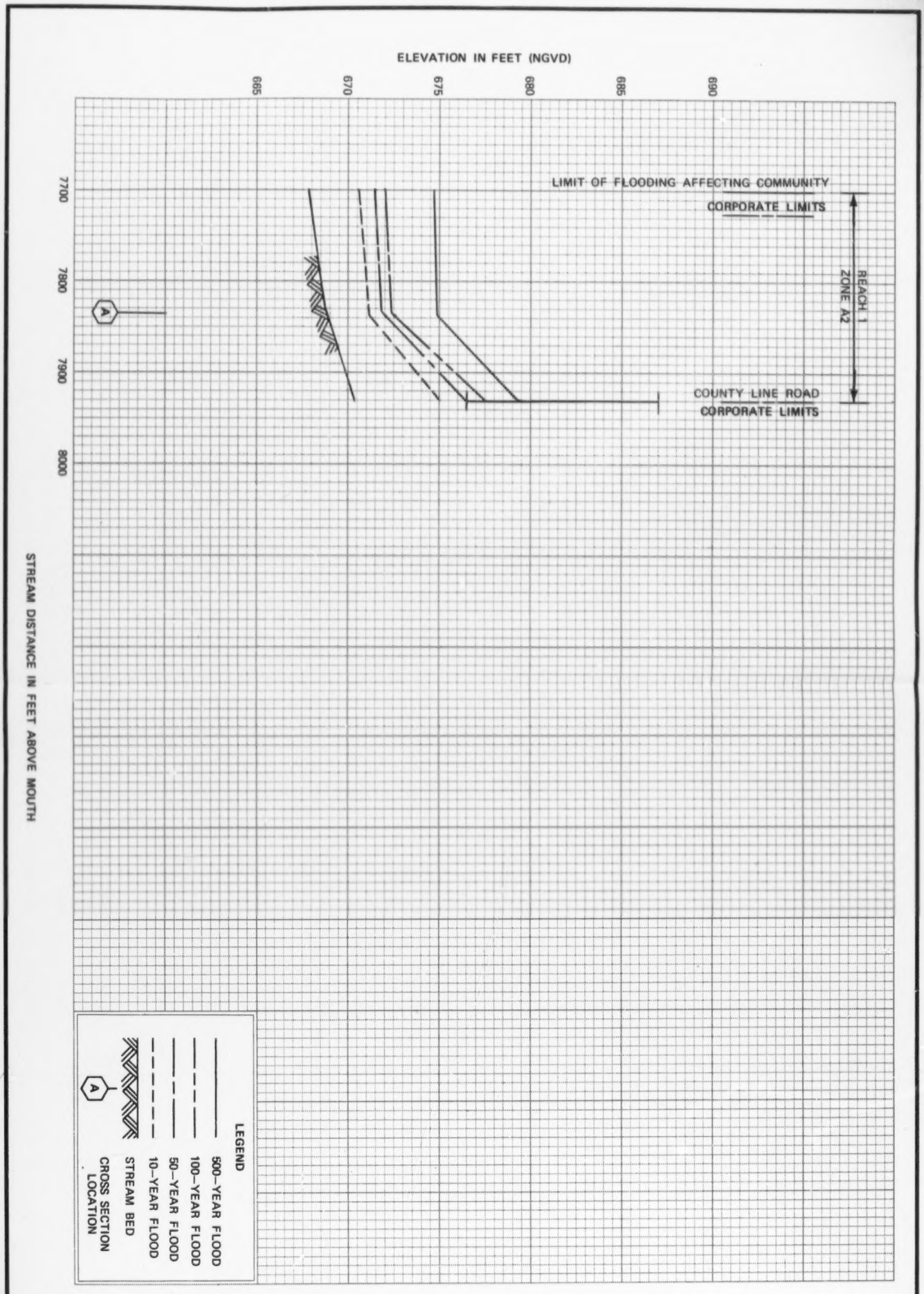
09P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

FLOOD PROFILES

TRIBUTARY B



10P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

VILLAGE OF BURR RIDGE, IL
(DU PAGE AND COOK COS.)

FLOOD PROFILES

TRIBUTARY C